

INFORMATION SHEET

ORDER R5-__

PRIMA BELLA PRODUCE, INC. AND MARK BACCHETTI
PRIMA BELLA FOOD PROCESSING FACILITY
SAN JOAQUIN COUNTY

Prima Bella Produce, Inc. and Mark Bacchetti (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 10 September 2007 to allow treatment and land application of wastewater generated at its processing facility. Additional information was submitted on 7 September 2007 and 11 April 2011. Prima Bella Produce, Inc. operates the processing facility and adjoining land application area. Mark Bacchetti is president of Prima Bella Produce, Inc. and owns the property where the facility is located.

The Discharger receives, washes, and packages fresh corn at a facility located in Tracy, San Joaquin County. The facility consists of an office, warehouse, paved parking areas, a wastewater pond, and a land application area (LAA).

The facility employs approximately 160 workers year-round and operates 5 days a week from May through October. Equipment cleaning occurs daily, Monday through Friday after each day's processing activities. Domestic wastewater is treated with an onsite septic system regulated by the San Joaquin County Department of Environmental Health.

Wastewater Generation, Flow Rate, and Quality

Food processing wastewater is generated during corn processing, and equipment and floor cleaning. Prima Bella Produce, Inc. packages approximately 26,000 tons/year of fresh corn. Corn processing includes conveyance, washing, trimming, and husking. Water is used to transport the corn in conveyance troughs, washing removes sediment from the corn, trimming removes corn silk, and husking removes the husk from the corn.

Wastewater is collected in floor drains, screened, and then discharged to a sump before being pumped to the aerated cell of the wastewater pond. In addition to the facility wastewater, stormwater and supplemental irrigation water is added to the wastewater pond.

The wastewater pond is lined with a 60-mil thick HDPE liner and provides approximately 4.5 million gallons of storage capacity. The pond is divided into treatment and storage cells. The treatment cell is equipped with mechanical aerators.

After treatment the wastewater possesses a relatively low biochemical oxygen demand (BOD) (less than 70 mg/L), total nitrogen concentration (ranging from 6 to 17 mg/L), and FDS concentrations (ranging from 330 to 595 mg/L). The wastewater is blended with a substantial amount of supplemental irrigation water.

The wastewater flow limits provide a daily limit as a monthly average (100,000 gallons per day as a monthly average). The flow limits allow the Discharger flexibility in managing wastewater application because in most months the wastewater generation will be less than the monthly average limit. The WDRs include Discharge Prohibitions, Specifications, Effluent Limitations, and Land Application Area Requirements that will prevent nuisance conditions and/or overloading of the LAA.

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The WDRs require the Discharger to submit and implement a *Nutrient Management Plan* to ensure the LAA is not overloaded with nutrients.

Supplemental Irrigation Water

Because wastewater will not be sufficient to meet the crop irrigation needs during the summer months, supplemental irrigation water will be applied. It is anticipated that supplemental irrigation water will be required in the months of June through October during normal precipitation years. Normally wastewater will not be applied from November through February; however, climatic conditions may require irrigation of the crop during the winter months.

Supplemental water is provided by the Independent Mutual Water Company; the source water is Old River. The supplemental water quality is significantly better than the shallow groundwater at the site. Although the supplemental water quality fluctuates over time, it has remained better than shallow groundwater quality. Supplemental water quality ranged as follows: FDS concentrations ranged from 200 mg/L to 320 mg/L, and total nitrogen ranged from 0.4 mg/L to 3.0 mg/L.

Background Groundwater Quality

Shallow groundwater exists approximately seven feet below the ground surface and flows to the north-northeast. Shallow groundwater quality at the facility is poor. Underlying groundwater quality was characterized by collecting five grab groundwater samples. The average FDS concentration was 3,440 mg/L, which is much worse than the flow weighted wastewater/supplemental irrigation water average concentration of FDS (398 mg/L). Similarly, the average nitrate concentration in shallow groundwater was (272 mg/L), which is much worse than the flow weighted wastewater/supplemental irrigation water average concentration of (3.6 mg/L).

The site's supply well is screened below a substantial low permeability zone and produces better quality groundwater than the shallow zone. The well produces groundwater with a TDS concentration of 450 mg/L and a total nitrogen concentration of 1.6 mg/L.

Land Application Area

The LAA consists of 16.3 acres of cropped land divided into irrigation checks. The LAA will be cropped with orchard grass, rye grass, and fescue hay or a similar crop. The crop will be cut and removed from the LAA as often as needed to maintain crop health and crop production.

Nitrogen is present in both the wastewater and in the supplemental irrigation water. The estimated nitrogen concentration in wastewater is approximately 2.6 mg/L. The estimated nitrogen concentration in supplemental irrigation water is 6.0 mg/L. The approximate total nitrogen loading rate is 29.4 lbs/ac/year. The mixture of orchard grass, rye grass, and fescue hay crop grown in the LAA will take up approximately 300 pounds per acre of nitrogen. Due to the nitrogen deficiency, additional nitrogen may be required to support crop health.

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Solids Disposal

Solid wastes consisting of corn husks, kernels, stems, etc. are generated by the processing operations. Solids are removed from the wastewater during screening and conveying processes and are transported offsite for animal feed. Approximately 84 tons/day of solids are generated during peak processing activities

Stormwater

Stormwater is collected from paved areas and roof down-spouts; it is mixed with wastewater at the sump. The mixture is discharged to the wastewater pond and applied to the LAA.

Site Specific Conditions

Land use in the vicinity consists primarily of agricultural uses. All portions of the facility are within the 100-year floodplain. However, the top of the pond berms are designed to be two feet above the 100-year flood elevation.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Surface water drainage is to Old River. The facility is within the San Joaquin Delta Hydrologic Area (544.00), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

The Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition for The Sacramento River Basin and the San Joaquin River Basin (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. The receiving water is groundwater. The beneficial uses of groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

The beneficial uses of the Sacramento/San Joaquin Delta are municipal and domestic supply; agricultural supply; industrial service supply, industrial process supply; navigation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.

The site is located within the Delta Protection Commission Secondary Zone. The Secondary Zone is subject to the land use authority of local government. The site activity is acceptable in the Secondary Zone.

Antidegradation

The antidegradation directives of State Water Board Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that the policy of the State in granting of permits and licenses for unappropriated water and the disposal of wastes into the water of the State shall be so regulated as to achieve highest water quality consistent with maximum benefit to the people of the State and shall be controlled so as to promote the peace, health, and welfare of the people of the State.

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In allowing a discharge, the Central Valley Water Board must comply with Water Code section 13263 in setting appropriate conditions. The Board is required, relative to the groundwater that may be affected by the discharge, to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Regional Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (Water Code section 13263(b)) and must consider other waste discharges and factors that affect that capacity.

Degradation is allowed under Resolution 68-16 if the Central Valley Water Board determines that:

- The degradation is consistent with maximum benefit to the people of the State.
- The degradation will not unreasonably affect present and anticipated future beneficial uses.
- The degradation does not cause exceedance of one or more water quality objectives.
- The Discharger employs best practicable treatment or control to minimize degradation.

The Discharger has submitted data consistent with an Antidegradation Analysis. Groundwater quality has been investigated. The Discharger will utilize a treatment process consisting of physical and biological processes to reduce the residual solids and BOD found in the facility wastewater. The treatment pond is lined, and therefore will minimize wastewater infiltration to groundwater. Biological treatment in lined ponds is consistent with typical industrial food processing best management and treatment control methods.

The Discharger has implemented significant source controls and recycling programs at the facility to minimize the volume and total load of waste constituents applied to land. Those controls include substitution of potassium based chemicals for sodium based chemicals, use of peracetic acid rather than chlorine based chemicals, physical screening of wastewater to lower BOD, recycling wastewater to reduce FDS load originating in the water supply, installing a synthetic liner in the wastewater pond, nearly doubling the LAA acreage, use of higher quality surface water as supplemental irrigation water, employee training regarding wastewater issues, and modifying the site activities to minimize cleaning activities to conserve water.

The use of facility wastewater to irrigate crops in place of higher quality surface or groundwater supplies is a benefit to the people of the state. The facility is an important component of the economic development of the region. The facility provides approximately 160 full time jobs during processing season and will provide state and local revenue. The economic prosperity of the region and associated industry is a benefit to the people of the State.

Title 27

Title 27, CCR, Section 20005 et seq. (Title 27), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and

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specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent is acceptable under Title 27 regulations.

The discharge of wastewater and the operation of storage facilities associated with a wastewater application are exempt from Title 27 if the discharge is in accordance with the WDRs that implement the Basin Plan, Resolution 68-16, and other conditions described below. The exemption, pursuant to Water Code section 20090(b), 20090(f), and 20090(h) is based on the following:

- The operation of the lined wastewater treatment pond and the application of treated wastewater to the LAA are exempt based on Water Code section 20090(b). The Central Valley Water Board has issued waste discharge requirements; the discharge is in compliance with the Basin Plan; and the wastewater does not need to be managed according to California Code of Regulations, title 22 as a hazardous waste.
- Application of decomposable solids as a soil amendment to the LAA is exempt based on Water Code section 20090(f). Because the wastewater is screened prior to discharge to the wastewater pond, only minor amounts of decomposable solids are expected to be applied to the LAA. However, any application of solids is exempt because the material is nonhazardous; the waste constituents are decomposable; application to land is considered a best management practice; the practice allows the nutrients to slowly decompose, prevents odors or vector issues associated with composting vegetable solids, and improves soil tilth; and the Central Valley Water Board is issuing waste discharge requirements.
- Application of treated wastewater to the LAA is exempt based on Water Code section 20090(h) because the discharge will result in additional waste treatment, water reuse, and nutrient recycling. Natural processes in the LAA provide the additional treatment; and nutrients will be taken up by crops, cut, and removed from the LAA.

California Environmental Quality Act (CEQA)

The County issued building permits for the recent facility improvements, including construction of a lined wastewater pond, but these were ministerial because the modifications did not involve any building square footage increase. The Discharger expects that the Central Valley Water Board will be the lead agency for any CEQA review that is required to support adoption of WDRs and has submitted an Initial Study with the RWD.

A Negative Declaration for the expansion at the facility was adopted by the Central Valley Water Board on __ (Resolution__). The Central Valley Water Board determined that the expansion of the facility will not have significant adverse environmental impacts if the Discharger complies with this Order

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Effluent Limitations

Effluent limitations for BOD, FDS, and Total Nitrogen are included in the WDRs. Each of the limits is discussed below:

- BOD loading limits were included to minimize the possibility of odors generated by the land application. BOD loading shall not exceed a daily maximum of 300 lbs/ac/day or a cycle average of 100 lbs/ac/day.
- The FDS limit is intended to prevent degradation of groundwater with respect to salinity. FDS concentrations were set as daily maximum and annual average. The FDS limit is set at 2,000 mg/L (daily maximum) and 1,500 mg/L (annual average). The FDS limits are set well below the existing groundwater quality values.
- The total nitrogen limit is based on the nitrogen uptake value of the proposed crop. The nitrogen limit is set at 300 lb/ac/yr as an annual maximum.

Treatment Technology and Control

Given the character of food processing wastewater, slow rate land treatment and secondary treatment technology is generally sufficient to control degradation of groundwater from decomposable organic constituents.

Food processing wastewater sometimes contains nitrogen in concentrations greater than water quality objectives. Groundwater degradation by nitrogen can be controlled by an appropriate screening, settling, and slow rate land application with cropping activities when crops are harvested and removed from the land application area. The effectiveness varies, but generally best practicable treatment and control is able to control nitrogen degradation of groundwater at a concentration well below the water quality objectives. The Discharger has 16.3 acres of cropped LAA. The crops have the capability to take up the nutrients in the wastewater.

Dissolved solids can pass through the treatment process and soil profile; effective control of such constituents relies primarily upon source control and pretreatment measures. If not managed carefully, long-term land discharge of food processing wastewater can degrade groundwater with dissolved solids (as measured by FDS). Source control is an effective means to prevent groundwater degradation by FDS. The Discharger has implemented a number of best practicable treatment and control measures to minimize groundwater quality degradation.

A discharge of wastewater that overloads soils with nutrients and organics can result in anaerobic conditions in the soil profile, which in turn creates organic acids and decreases soil pH. Under conditions of low soil pH (below 5), iron and manganese compounds in the soil can solubilize and leach into groundwater. Overloading the land application areas is preventable, and the soil is expected to provide adequate buffering of acidic or basic wastewater.

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Monitoring Requirements

Water Code section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. This Order requires monitoring of wastewater generation rate, wastewater quality, land application area, and residual solids.

TRO/ALO 3/7/2012